WHAT IS CLAIMED IS:

1. A method for detecting motion of an object using a capacitance based sensing and control system, said method comprising the steps of:

sensing a presence of the object based on measured capacitance between a sensor and the object;

sensing a change in capacitance of the object; and

adjusting operation of the control system based upon said sensed capacitance change.

2. A method according to Claim 1 wherein said step of sensing a presence of the object further comprises the step of measuring charge transfer to determine the relative capacitance of the object.

3. A method according to Claim 1 further comprising the step of recalibrating the control system when at least one of a new, nominal capacitive load is detected and at a user's discretion.

4. A method according to Claim 1 wherein said step of sensing a change in capacitance further comprises the step of sensing changes in the geometry of the object.

5. A method according to Claim 1 wherein said step of sensing a change in capacitance further comprises the step of sensing proximity of the object to other objects.

6. A method in accordance with Claim 1 wherein the sensor is a human body.

7. A capacitance based proximity sensor comprising:

a sensing surface of thin film conducting material; and

a non-conducting backing material comprising a front side and a back side, said sensing surface mounted on said front side.

8. A sensor according to Claim 7 wherein said sensor further comprises an optional backing surface of conducting material upon which said back side of said non-conducting backing material is mounted.

9. A sensor according to Claim 7 wherein said sensing surface is electrically coupled to a capacitance sensing circuit.

10. A sensor according to Claim 8 wherein said optional backing surface is electrically coupled to a circuit ground.

11. A sensor according to Claim 7 wherein said sensor is configured to be cylindrically shaped.

12. A sensor according to Claim 11 wherein said sensing material is configured to cover an outer surface and both end surfaces of the cylinder.

13. A sensor according to Claim 7 wherein said sensor is rectangularly shaped.

14. A sensor according to Claim 13 wherein said sensing surface is configured to be of a smaller surface area than said backing material.

15. A sensor according to Claim 13 wherein said rectangularly shaped sensor is approximately 20cm in both length and width.

16. A sensor according to Claim 13 wherein said sensing surface comprises a plurality of electrically connected rectangular shaped conductors, said rectangular conductors each having an inner dimension and an outer dimension.

17. A sensor according to Claim 16 comprising three rectangular shaped conductors.

18. A sensor according to Claim 17 wherein a first rectangularly shaped conductor comprises an inner dimension of 0cm and an outer dimension of 1.5cm, a second rectangularly shaped conductor comprises an inner dimension of 4.5cm and an outer dimension of 7.5cm, and a third rectangularly shaped conductor comprises an inner dimension of 10.5cm and an outer dimension of 14.75 cm.

19. A sensor according to Claim 7 wherein said sensor is circularly shaped.

20. A sensor according to Claim 19 wherein said sensing surface is configured to be of a smaller surface area than said backing material.

21. A sensor according to Claim 19 wherein said circularly shaped sensor is approximately 21cm in diameter.

22. A sensor according to Claim 19 wherein said sensing surface comprises a plurality of electrically connected circularly shaped conductors, said circular conductors each having an inner dimension and an outer dimension.

23. A sensor according to Claim 22 comprising three circular shaped conductors.

24. A sensor according to Claim 23 wherein a first circularly shaped conductor comprises a diameter of 3cm, a second ring shaped conductor comprises an inner diameter of 9cm and an outer diameter of 15cm, and a third ring shaped conductor comprises an inner diameter of 21cm and an outer diameter of 27 cm.

25. A sensor according to Claim 7 wherein said sensor is irregularly shaped.

26. A sensor according to Claim 25 wherein said sensing surface is configured to be of a smaller surface area than said backing material.

27. A sensor according to Claim 25 wherein said irregularly shaped sensor is approximately 21cm in length and width.

28. A sensor according to Claim 25 wherein said sensing surface comprises a plurality of electrically connected irregularly shaped conductors, said irregularly shaped conductors each having an inner dimension and an outer dimension.

29. A sensor according to Claim 28 comprising three irregularly shaped conductors.

30. A sensor according to Claim 29 wherein a first irregularly shaped conductor comprises a length and width of 3cm, a second irregularly ring shaped conductor comprises an inner length and width of 9cm and an outer length and width of 15cm, and a third irregularly ring shaped conductor comprises an inner length and width of 21cm and an outer length and width of 27 cm.

31. A medical imaging system comprising

a radiation source further comprising at least one capacitance based proximity sensor;

a capacitive sensing circuit; and

a control system configured to control positioning of said x-ray source and proximity sensor.

32. A system in accordance with Claim 31 wherein said control system configured to orient said radiation source in at least one of a horizontal and a vertical direction.

33. A system in accordance with Claim 31 wherein said proximity sensor configured to measure capacitance of an object.

34. A system in accordance with Claim 31 wherein said proximity sensor configured to measure capacitance of an object, when said object is in direct contact with said sensor.

35. A system in accordance with Claim 31 wherein said proximity sensor configured to measure capacitance of an object, when said object is in proximity of said sensor.

36. A system in accordance with Claim 31 wherein an object is a human body said proximity sensor configured to measure changes in capacitance as said sensor follows the human body contour.

37. A system in accordance with Claim 31 wherein said proximity sensor configured to measure changes in capacitance of an object, when said object moves.

38. A system in accordance with Claim 37 wherein an object is a human body said human body such that said sensor detects movement of a raised arm, a crossed leg, a finger wiggling, a toe wiggling, and torso motion.

39. A system in accordance with Claim 31 wherein said proximity sensor configured to detect capacitive changes omni-directionally.

40. A system in accordance with Claim 31 wherein said proximity sensor configured to be re-calibrated based on at least one of a size, a shape, and a effective sensing surface of an object.

41. A system in accordance with Claim 31 wherein said proximity sensor configured to be re-calibrated based on at least one of a temperature and a relative humidity of an environment in which an object is placed.

42. A system in accordance with Claim 31 wherein said capacitive sensing circuit configured to use charge transfer technology.

43. A system in accordance with Claim 31 wherein said capacitive sensing circuit configured to sense changes in capacitance of at least 15femtoFarads.

44. A system in accordance with Claim 31 wherein an object is a human body said capacitive sensing circuit configured to sense capacitive changes to said human body, when said human body is covered with at least one of paper, plastic, and clothing.

45. An apparatus comprising:

a sensing surface of thin film conducting material;

a non-conducting backing material comprising a front side and a back side, and

said sensing surface mounted on said non-conducting backing.

46. An apparatus in accordance with Claim 45 wherein said apparatus configured to be at least one of a sensor and a detector.

47. An apparatus in accordance with Claim 45 wherein said sensing surface is electrically coupled to a capacitive sensing circuit.

48. An apparatus in accordance with Claim 47 wherein said capacitive sensing circuit configured to measure a nominal capacitance at least up to 2500pF.

49. An apparatus in accordance with Claim 45 wherein said backing surface is electrically coupled to a circuit ground.

50. An apparatus in accordance with Claim 45 wherein said apparatus is configured to be cylindrically shaped.

51. An apparatus in accordance with Claim 45 wherein said apparatus is configured to be an irregular shape.

52. An apparatus in accordance with Claim 51 wherein said apparatus is configured to be an irregular shape including a angled front side, a flat back side, an open top side, a convex first side, a convex second side offset from said first side.

53. An apparatus in accordance with Claim 45 wherein said sensing material is configured to cover an outer surface of said apparatus.

54. An apparatus in accordance with Claim 45 wherein said apparatus is configured to be rectangularly shaped.

55. An apparatus in accordance with Claim 54 wherein said sensing material is configured to be of a smaller surface area than said backing material.

56. An apparatus in accordance with Claim 45 wherein said sensing surface configured as a single sensing zone.

57. An apparatus in accordance with Claim 56 wherein said sensing zone configured to be electrically coupled to a capacitive sensing circuit.

58. An apparatus in accordance with Claim 45 wherein said sensing surface configured to have a plurality of sensing zones.

59. An apparatus in accordance with Claim 58 wherein said sensing zones configured to be electrically coupled to a capacitive sensing circuit.

60. An apparatus in accordance with Claim 58 wherein said sensing zones configured to be spaced equidistant from one another.

61. An apparatus in accordance with Claim 58 wherein said sensing zones configured to partially cover an outer surface of said apparatus.